TracHack

Encouraging Data Scientists to build a better world.

Challenge 21.2

Challenge 21.2 – Predicting Upgrades

Background

TracFone's customers draw from diverse and vibrant backgrounds. For example, they may be proudly pragmatic who appreciate good value mobile service plans. Alternatively, they may be travelers that are temporarily visiting friends or family or forming new memories on their vacation to take home with them. They may even belong to financially fragile communities that have traditionally been underserved by the large wireless providers that required credit checks and long-term contracts. Ever since our inception in 1996, our focus has always been on providing ***coverage and access for all***.

TracFone was a pioneer in the USA market to offer mobile phones and plans without extensive credit requirements, making smartphones accessible to a wider part of the community. Beyond the cellular network, the phone device has an important impact on the customer's experience. One of our challenge at Tracfone is to ensure we are able to anticipate our customer's need for an upgrade to their device.

Objective

The 21.2 challenge is to use machine learning to predict customers ready for a device upgrade. TracFone offers customers mobile phones to go with the plans from feature phones, to Apple iPhones and Android smartphones. An aging device where the battery is loosing its ability to retain charge may keep running out of battery when the customer needs it most. Meanwhile certain customer's usage and lifestyles may be better catered with the latest mobile phone. Furthermore a grandmother who is accustomed to her mobile phone may not be comfortable getting a new device.

If we can accurately predict when a customer is ready for an upgrade, we can ensure that only the customers looking to upgrade their device do in fact get the offer to

upgrade their device. Proactively anticipating and serving our customer's needs for a new device will ensure a good experience for our customers.

FAQ

Who can join in?

TracHack 21.2 participants will be students from University of New South Wales (Sydney, Australia) and University of Navarra (Pamplona, Spain).

When & where?

TracHack 21.2 is an online competition. The data for the competition is released April 5, 2021 and ends April 25, 11:59pm US Eastern Time, 2021.

How are the winners selected?

Teams are welcome to make as many submissions along the way, and the accuracy of solution will be evaluated based on **F1 score.** The winners of the challenge will be announced based on the ranking from the final submission. That means your team need to ensure your final submission is the best solution that you come up with during the 3-week period.

The top 3 teams with the highest F1 score will win cash prizes, fame and glory. Even though the final ranking is based on the final submission, it is a good idea to validate the approach and solution along the way using regular submissions as checkpoints.

What technologies can I use?

TracHack 21.2 solutions must be build using Python3. TracFone will provide a dedicated environment with Python3 and Jupyter, dedicated for each team. Teams will access data, build their solutions and submit their predictions via that dedicated environment. So it is important for you to get familiar with it and set it up once your team signs up and gets the relevant details. Keep in mind that the winning teams will have to submit the code that produced their winning solution once the winners are announced for verification prior to the awards.

Where is the data?

The data will be released on April 5 accessible from within that environment. Teams may not download part or all of the data locally. Teams downloading the data outside

that environment will be disqualified from the competition. All data and code developed by the teams must remain in the team's environment.

How do I submit my solution?

The details are available on the **submissions** page and consult the **FAQ** page.

What happens when my team wins?

You win fame, glory and bragging rights. There are also cash prizes for the teams to go with trophies:

> 1st place team: $3,000
>
> 2nd place team: $2,000
>
> 3rd place team: $1,000

The winning teams will be required to make a 5-minute presentation at the award ceremony that describes their solution and how they tackled this problem.

How do I get started?

- Understand the **Rules** and consult the **FAQ**
- Join a team (if not already) – *Check with Dr. Gelareh Mohammadi (University of New South Wales) or Ivan Cordon Medrano (University of Navarra).*
- Sign an NDA on data usage – *If you are part of a signed up team you would have gotten a DocuSign email.*
- Ensure your are setup to access your team's dedicated Python development environment. – *Check your emails for setup and login instructions once you have signed the NDA.*
- Setup to make your **Submissions**

Key dates

March 22, 2021	TracHack 21.1 Problem Announced
April 5, 2021	TracHack 21.1 Data Released
April 25, 2021 – 11:59pm US ET	Deadline for Final submission
April 30, 2021 – 7:00am US ET	Awards & Presentations

Resources

If you have any question, feel free to reach out to us at **TracHackAdmin@tracfone.com** Once your team is registered you'll be invited to a Microsoft Teams Channel.

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